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MALDI/Mass Spectrometry of "Normal Appearing" and Dystrophic
Axons in Spinal Cord of Multiple Sclerosis (MS)

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14. ABSTRACT Multiple sclerosis is often considered to be disease affecting the insulating material around the nerves, also referred to as myelin, which is caused by an abnormal immune response to proteins in the insulating sheath surrounding nerves. More recent studies have suggested that in addition to myelin the nerve fibers are also destroyed in MS. In fact the major cause of disability in MS is most likely due to damage to the nerves. The abnormalities in the nerves are most prominent in the spinal cord. At present there is little or no information on the causes for the destruction of the nerves in the spinal cord. Using state of the art techniques our study will examine the changes in the nerves in spinal cord of patients who have died from progressive MS. We will dissect out the abnormal regions of the spinal cord subject and determine the changes in the nerves in MS patients compared with patients who have died from other causes. We predict that we will be able to show the nature of the abnormality in the nerves of MS patients. These studies are likely to point to novel mechanism that can protect the nerves and restore neurological function.				
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Progress Report:

Introduction: The design of the study was to define the protein signature of dystrophic and non dystrophic axons in corticospinal tracts of spinal cord of MS patients using laser capture micro-dissection and MALDI-Mass Spectrometry. Halting the progression of MS is of utmost urgency today. While therapies that decrease the number and severity of relapses are currently available, none of the current therapies alter the progression of MS. Once progressive disease is manifest, most patients show an inexorable worsening of gait, balance and autonomic function. Understanding the nature of the progression is of utmost importance in devising new and novel therapies in MS.

Objective: Using MALDI/mass spectrometry we will determine:

(a) if “normal appearing” large diameter axons in CS tracts of MS patients differ from those seen in controls?

(b) the protein profile of dystrophic small axons in CS tracts differ when compared with normal large axons and those of non MS controls?

Progress: We have collected 6 spinal cords from patients who had died from complications of secondary progressive MS. The spinal cord tissue was obtained from the Brain Bank in the Netherlands. Multiple sections of the spinal cord tissue were taken and stained for myelin and axons. In all the 6 MS spinal cords areas of demyelination and normal appearing white matter were obtained.

Axonal staining was done and we have identified regions of the white matter with a larger sized axons and those with smaller size axons. Our first experiment was designed to examine the white matter areas using MALDI/spectroscopy between MS and healthy controls. We have subjected the following regions of white matter from MS and controls for MALDI: a) normal appearing white matter areas with large axons in MS and healthy controls, b) normal appearing white matter with smaller density of axons between normal and MS patients, c) demyelinated regions of white matter in MS patients. The data set from the different regions has been pre-processed and are currently being analysed.

Potential problems: We faced two main problems in our study and these were delays that were not in our control.

1. We were delayed in the start of the experiments by about 4 months in the acquisition of the tissue material for study. The tissues were obtained from outside of the US and the regulatory issues involved.
2. The MALDI/spectroscopy machine malfunctioned from April 2012 to June 2012. For these reasons there was a back log of tissues which could not be processed and there was a delay in getting our experiments done in a timely manner.

Research accomplishments:

- a) Histochemical and immune-histological analysis of regions of normal and abnormal appearing axons in spinal cord of MS patients and controls
- b) MALDI/spectrometric analysis of these regions and preliminary determination of the differences in regions of normal appearing white matter between MS and controls.

We had six spinal cords from patients with MS and another five from control.

In MALDI experiment, from each section of the spinal cord, at least two areas were collected from the spinal cord of MS patients: one was from demyelination area and the other from NAWM (post-column). The corresponding areas from the spinal cord of control individuals were collected as well.

The following areas were subjected to MALDI analysis:

1. The samples from the areas of demyelination in MS vs. corresponding areas non-demyelinated in control.
2. The samples from the areas of demyelination in MS vs. the areas of NAWM in MS, both from post column.
3. The samples from the areas of NAWM in MS vs. corresponding normal appearing white matter in the controls, both from post column.

When we compared areas of demyelination in MS versus corresponding areas which were non demyelinated in controls we were able to identify 262 spectral peaks which were different in MS from that seen in controls (Table 1).

In the second analysis of normal appearing white matter and demyelinated areas in MS spinal cord we identified 262 spectral peaks which differed from regions of demyelination in MS when compared to controls (Table2).

In the final analysis when we compared normal appearing white matter between MS and controls 38 specific peaks were identified (Table 3).

Sequencing of peaks of high significance:

It was our strategy to first examine the 38 MZ peaks which were different in normal appearing white matter when compared to controls. We believed that these regions are likely to be most informative and provide protein abnormalities in regions of white matter of MS patients which show normal staining but yet have a spectral pattern which is different from that seen in controls. We have so far identified 8 spectral regions which show promise.

We have attempted analyze the peptide sequence of the 8 proteins which are different in MS from controls. After three attempts we have been unable to obtain reproducible results as to the identity of the peptides.

MZ val	P value MS versus CTRL	FDR	
1149.8	0.010516952	0.588663311	1
737.6	0.010694298	0.588663311	2
1097.8	0.012174285	0.588663311	3
675.6	0.012209835	0.588663311	4
907.6	0.012321236	0.588663311	5
848.6	0.013435832	0.588663311	6
1164.8	0.01438997	0.588663311	7
1094.8	0.020923175	0.588663311	8

Reportable outcomes: None

Conclusions: Our preliminary studies have shown that there are differences in the MADI/spectroscopy signature between the normal appearing regions of spinal cord from MS patients and healthy control. This is important and we were limited by the amount of tissue to clearly characterize the peptides of the lesions. We will require more tissue to clearly analyze the differences in the protein signature of the normal appearing white matter in MS patients with that seen in controls.

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TABLE 1

3_GreenCTvsGreenMS

MZ value	Pvalue-GreenCT-GreenMS	GreenCT_GreenMS_FDR	rank
1149.8	0.010516952	0.588663311	1
737.6	0.010694298	0.588663311	2
1097.8	0.012174285	0.588663311	3
675.6	0.012209835	0.588663311	4
907.6	0.012321236	0.588663311	5
848.6	0.013435832	0.588663311	6
1164.8	0.01438997	0.588663311	7
1094.8	0.020923175	0.588663311	8
945.8	0.024582728	0.588663311	9
981.8	0.025117133	0.588663311	10
940.6	0.025434379	0.588663311	11
712.6	0.026736224	0.588663311	12
1095.8	0.027011766	0.588663311	13
967.6	0.029329489	0.588663311	14
946.6	0.03022588	0.588663311	15
736.6	0.031314997	0.588663311	16
1352.8	0.03153644	0.588663311	17
735.6	0.032446136	0.588663311	18
1075.8	0.034091133	0.588663311	19
906.6	0.035634263	0.588663311	20
982.6	0.03784704	0.588663311	21
1103.8	0.038456746	0.588663311	22
1096.8	0.038462429	0.588663311	23
1107.8	0.039508217	0.588663311	24
809.6	0.040283323	0.588663311	25
749.6	0.040884105	0.588663311	26
897.6	0.042161796	0.588663311	27
774.6	0.04252857	0.588663311	28
1076.8	0.042638629	0.588663311	29
711.6	0.04316787	0.588663311	30
937.6	0.043669483	0.588663311	31
700.6	0.044668702	0.588663311	32
820.6	0.045683205	0.588663311	33
960.8	0.046200018	0.588663311	34
1051.8	0.04636867	0.588663311	35
1078.8	0.047072045	0.588663311	36
936.6	0.047511928	0.588663311	37
775.6	0.048585106	0.588663311	38

TABLE 1

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
726.6	0	0	1
727.6	0	0	1
738.6	0	0	1
739.6	0	0	1
861.6	0	0	1
1051.8	0	0	1
1052.8	0	0	1
1099.8	0	0	1
1100.8	0	0	1
1101.8	0	0	1
1102.8	0	0	1
1336.8	0	0	1
859.6	2.13E-14	1.38E-12	13
1104.8	2.40E-14	1.44E-12	14
1337.8	1.34E-13	7.53E-12	15
717.6	3.94E-13	2.08E-11	16
736.6	1.04E-12	5.17E-11	17
716.6	2.40E-12	1.12E-10	18
1352.8	4.53E-12	2.01E-10	19
862.6	3.63E-11	1.53E-09	20
715.6	4.44E-11	1.78E-09	21
1050.6	9.56E-11	3.66E-09	22
1148.8	1.76E-10	6.44E-09	23
1149.8	4.86E-10	1.70E-08	24
699.6	1.68E-09	5.65E-08	25
1301.2	3.92E-09	1.27E-07	26
1105.8	5.10E-09	1.59E-07	27
1339.8	5.57E-09	1.67E-07	28
1353.8	7.58E-09	2.20E-07	29
1012.8	9.42E-09	2.64E-07	30
1084.8	1.06E-08	2.88E-07	31
737.6	1.39E-08	3.67E-07	32
774.6	1.60E-08	4.09E-07	33
1013.8	2.05E-08	5.09E-07	34
858.6	2.29E-08	5.51E-07	35
930.8	3.67E-08	8.58E-07	36
873.6	4.14E-08	9.43E-07	37
857.6	7.42E-08	1.64E-06	38
975.8	9.38E-08	2.03E-06	39
1114.8	1.61E-07	3.39E-06	40
643.4	1.77E-07	3.64E-06	41
1113.8	3.73E-07	7.48E-06	42
775.6	4.86E-07	9.40E-06	43
1339	4.94E-07	9.40E-06	44
1496.8	5.03E-07	9.40E-06	45
931.8	5.90E-07	1.08E-05	46
735.6	7.09E-07	1.27E-05	47
1243.8	1.67E-06	2.92E-05	48
760.6	1.70E-06	2.92E-05	49
1072.8	2.44E-06	4.03E-05	50
684.6	2.44E-06	4.03E-05	51

TABLE 1

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
728.6	3.32E-06	5.37E-05	52
1212.8	3.57E-06	5.68E-05	53
1014.8	3.77E-06	5.88E-05	54
1111.8	3.84E-06	5.88E-05	55
860.6	4.54E-06	6.82E-05	56
1460	5.35E-06	7.91E-05	57
1269.8	7.17E-06	0.000104054	58
956.6	7.68E-06	0.000109592	59
1127.8	8.22E-06	0.000115313	60
1086	9.50E-06	0.000131179	61
836.6	1.10E-05	0.000149224	62
1000.8	1.98E-05	0.000265199	63
863.6	2.26E-05	0.00029703	64
957.6	2.30E-05	0.000297557	65
1237.8	2.82E-05	0.000359983	66
1260.6	2.93E-05	0.000367034	67
1121.8	2.96E-05	0.000367034	68
837.6	3.13E-05	0.000381968	69
680.6	3.20E-05	0.000385208	70
1135.6	3.49E-05	0.00041398	71
1083.8	3.62E-05	0.000423016	72
1091.8	3.98E-05	0.000459293	73
698.4	4.05E-05	0.000460696	74
1103.8	4.36E-05	0.000489973	75
939.6	4.94E-05	0.000546838	76
840.6	5.10E-05	0.00055782	77
718.6	5.24E-05	0.000565855	78
1001.8	6.07E-05	0.000646661	79
959.8	8.13E-05	0.000855521	80
1408.8	8.38E-05	0.000871525	81
1093.8	8.51E-05	0.000874247	82
1218.6	8.80E-05	0.000892967	83
877.6	0.000108332	0.001085902	84
1177.8	0.000113322	0.001122552	85
1112.8	0.000128161	0.00125479	86
1055.8	0.000135349	0.001309928	87
1269	0.000140486	0.001332387	88
1115.8	0.000140834	0.001332387	89
1461	0.000154301	0.001443567	90
725.6	0.000182334	0.001687092	91
679.6	0.000188774	0.001727694	92
1019.6	0.000193273	0.001749852	93
833.4	0.000205174	0.001837838	94
824.6	0.000233838	0.002072546	95
972.8	0.000249444	0.002175391	96
1469.8	0.000250609	0.002175391	97
823.6	0.000274769	0.002360767	98
973.8	0.0002998	0.002549818	99
1136.8	0.000327677	0.002759038	100
1018.6	0.000357902	0.002983698	101
1082.8	0.000385016	0.003171661	102

TABLE 1

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1425.8	0.000387982	0.003171661	103
1098.8	0.000448551	0.003627948	104
1107.8	0.000452416	0.003627948	105
1361	0.000458077	0.00363869	106
1130.8	0.000484867	0.003815494	107
1053.8	0.000558273	0.004352462	108
685.6	0.000604039	0.004666066	109
1475	0.000661508	0.005063544	110
1061.6	0.000674197	0.005114176	111
1090.8	0.000716737	0.005388328	112
1015.8	0.000724808	0.005400784	113
749.6	0.000792416	0.005852755	114
1106.8	0.000976264	0.007090408	115
1178.8	0.000976826	0.007090408	116
835.6	0.000986555	0.007099823	117
1259	0.000997527	0.007117945	118
1270.8	0.001018044	0.007203305	119
866.6	0.001132518	0.007946501	120
955.8	0.00120993	0.008419511	121
678.6	0.00125109	0.00863457	122
1219.8	0.001348479	0.009231053	123
1368	0.001403848	0.009532578	124
1054.8	0.001529685	0.010262114	125
1129.8	0.001535661	0.010262114	126
1250.8	0.001617051	0.010720924	127
693.4	0.001688166	0.011030284	128
1205.6	0.001701328	0.011030284	129
1057.8	0.001705101	0.011030284	130
867.6	0.001716113	0.011030284	131
901.6	0.001761585	0.011236778	132
1352	0.001812158	0.011472456	133
1373	0.001864552	0.011716066	134
1008.4	0.001879187	0.011720557	135
1213.6	0.001897489	0.011747688	136
1302	0.001945305	0.011955819	137
992.8	0.002025108	0.012356094	138
1309.8	0.002060135	0.012479378	139
1211.8	0.002187367	0.013155449	140
1340.8	0.002218008	0.013245127	141
1244.8	0.002258269	0.013390581	142
1194.4	0.002310419	0.013604005	143
1058.8	0.002407758	0.014078696	144
1372	0.002480751	0.014405464	145
970.8	0.002547598	0.014692311	146
1305.8	0.002628978	0.014989358	147
1221.6	0.002647798	0.014989358	148
960.8	0.002652511	0.014989358	149
1357	0.002812906	0.015728564	150
999.6	0.002820681	0.015728564	151
1361.8	0.003001361	0.01655009	152
984.8	0.00300732	0.01655009	153

TABLE 1

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1028.8	0.003070744	0.016789395	154
1308.6	0.003118175	0.016938732	155
1002.8	0.003202485	0.017285205	156
1410	0.003249556	0.017427556	157
1063.8	0.003480569	0.018468204	158
1252.6	0.003487464	0.018468204	159
1251.8	0.004174483	0.021968217	160
1358	0.004384912	0.022932273	161
852.6	0.004545371	0.023624707	162
1275.4	0.004640945	0.023901569	163
719.6	0.004655413	0.023901569	164
723.4	0.004705291	0.024011244	165
724.6	0.004843062	0.024565412	166
1377.6	0.004880551	0.024607331	167
784.6	0.00499761	0.025047543	168
974.8	0.005071283	0.025266392	169
870.6	0.005193521	0.025723206	170
1277	0.005335506	0.026271908	171
1179.8	0.00541548	0.026510662	172
844.6	0.005471784	0.026631456	173
690.4	0.005564191	0.026925569	174
994.6	0.00560664	0.026975948	175
776.6	0.005970627	0.028564021	176
1367	0.006076524	0.028906403	177
792.6	0.006130197	0.0289979	178
1278.8	0.006168818	0.029017569	179
1204.8	0.006217381	0.029083525	180
1297	0.006468126	0.030089293	181
1029.8	0.006821913	0.031560716	182
1230.8	0.006880631	0.031658425	183
1004.6	0.006957972	0.031840286	184
1010.6	0.007057456	0.032120964	185
1449.2	0.007128078	0.032267964	186
1461.8	0.007390263	0.033275942	187
969.8	0.007569017	0.033899534	188
910.6	0.00780763	0.034783197	189
834.6	0.007872135	0.034885986	190
756.6	0.008049022	0.035483124	191
932.8	0.008184876	0.035894091	192
998.8	0.008389687	0.036601641	193
1003.8	0.009203363	0.039944495	194
1076.8	0.009406506	0.040468655	195
971.8	0.009438429	0.040468655	196
1128.8	0.009468319	0.040468655	197
1141.8	0.009661086	0.041084013	198
1108.8	0.009821541	0.041556471	199
1355	0.009990506	0.041916523	200
1070.6	0.010006201	0.041916523	201
1188.8	0.010081681	0.042023641	202
697.6	0.010334563	0.042865526	203
872.6	0.01060412	0.043767987	204

TABLE 1

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1041.8	0.010831549	0.044488607	205
1387	0.010965909	0.044821823	206
1410.8	0.011541748	0.046947594	207
1371	0.011758573	0.047599609	208
991.6	0.011916923	0.047781317	209
1214.8	0.011916956	0.047781317	210
761.6	0.012895363	0.051459221	211
1247.8	0.013106753	0.051972806	212
668.4	0.013147515	0.051972806	213
889.6	0.013906548	0.05471642	214
1035.6	0.014401275	0.056399414	215
850.6	0.016290257	0.063418308	216
1040.8	0.016344148	0.063418308	217
1266.8	0.016448866	0.063531859	218
1217.8	0.016724277	0.064267861	219
839.4	0.016792078	0.064267861	220
793.4	0.016888931	0.064346065	221
853.6	0.017038738	0.064624403	222
868.6	0.017463642	0.065938952	223
596.6	0.017724189	0.066112198	224
909.8	0.017756606	0.066112198	225
1220.8	0.01782211	0.066112198	226
1167.6	0.017823597	0.066112198	227
871.6	0.018240653	0.067362411	228
1027.8	0.018489054	0.067981589	229
1397.6	0.018603953	0.068106645	230
683.4	0.018806284	0.068549313	231
1056.8	0.019249725	0.069863228	232
1281.8	0.019690587	0.071156543	233
1125.8	0.019993409	0.071942096	234
1267.8	0.020904296	0.074899647	235
1326.2	0.021029146	0.075027714	236
1089.8	0.021262075	0.075538679	237
1304.8	0.021368711	0.075559148	238
874.6	0.021447312	0.075559148	239
722.6	0.022838986	0.080126777	240
1030.8	0.02304394	0.080259219	241
789.6	0.023067376	0.080259219	242
635.4	0.023661359	0.081987097	243
1095.8	0.024061694	0.082713238	244
1369	0.024067391	0.082713238	245
1271.6	0.024513952	0.083905479	246
794.6	0.024896135	0.084718967	247
831.6	0.024952855	0.084718967	248
633.4	0.025231924	0.085322409	249
806.6	0.026241755	0.088171883	250
1360	0.026320342	0.088171883	251
1123.8	0.026388734	0.088171883	252
595.4	0.027161366	0.090394743	253
1232.8	0.027574249	0.09140755	254
705.4	0.027965584	0.092341262	255

TABLE 1

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
997.8	0.028209371	0.092782386	256
985.8	0.029085909	0.095293132	257
1311.8	0.029334189	0.095734059	258
1277.8	0.029882301	0.097146322	259
1254.6	0.030338745	0.09793249	260
1017.8	0.030356746	0.09793249	261
922.6	0.030584535	0.098173842	262
1370	0.030738603	0.098173842	263
800.6	0.030781347	0.098173842	264
987.8	0.030947672	0.098331849	265
1406	0.031242579	0.098895681	266
700.6	0.031590198	0.099621524	267
634.4	0.032937941	0.103484127	268
1498	0.0331626	0.103802636	269
1155.8	0.03457681	0.107828423	270
1092.8	0.034938265	0.108553575	271
1026.8	0.035354865	0.109444105	272
1298	0.035817744	0.110470843	273
993.8	0.035984694	0.110580703	274
721.4	0.037500883	0.114820886	275
1124.8	0.037796694	0.115307305	276
600.4	0.038201667	0.115925758	277
832.6	0.038274775	0.115925758	278
940.6	0.038422234	0.115955272	279
788.6	0.03868091	0.116319022	280
1412.8	0.039037546	0.116764521	281
1189.8	0.039124007	0.116764521	282
912.6	0.039245082	0.116764521	283
914.8	0.039875557	0.118222603	284
1209.8	0.040349283	0.119011231	285
1393.6	0.040424242	0.119011231	286
928.6	0.043103166	0.126455978	287
1031.8	0.043938099	0.128457913	288
795.6	0.044153747	0.128641714	289
805.6	0.046144557	0.133284686	290
1163.8	0.046192023	0.133284686	291
1233.8	0.046222243	0.133284686	292
843.6	0.046445895	0.133472504	293
766.6	0.047113959	0.134931815	294
838.6	0.047650518	0.135748821	295
1246.8	0.047721676	0.135748821	296
1047.8	0.048887006	0.138388799	297
902.6	0.048978459	0.138388799	298
807.6	0.049220845	0.13855611	299
650.4	0.049366785	0.13855611	300

TABLE 1

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
711.6	1.30E-05	0.006945322	1
726.6	1.65E-05	0.006945322	2
1149.8	6.53E-05	0.018314576	3
1102.8	9.84E-05	0.020703306	4
1352.8	0.000147259	0.0227799	5
727.6	0.000162327	0.0227799	6
738.6	0.00021655	0.026047826	7
1339.8	0.000271834	0.027078525	8
1099.8	0.000289438	0.027078525	9
735.6	0.000363671	0.02804441	10
737.6	0.000366376	0.02804441	11
749.6	0.000460819	0.029733295	12
712.6	0.000482142	0.029733295	13
1148.8	0.000494378	0.029733295	14
801.6	0.00053327	0.029934202	15
868.6	0.000720329	0.037907325	16
994.6	0.000801981	0.039721648	17
1100.8	0.000874437	0.040891946	18
1101.8	0.00092826	0.040891946	19
998.8	0.000971305	0.040891946	20
1336.8	0.001152603	0.041619093	21
1113.8	0.001166009	0.041619093	22
1004.6	0.001225246	0.041619093	23
1027.8	0.00124619	0.041619093	24
1051.8	0.001256516	0.041619093	25
789.6	0.001313198	0.041619093	26
1337.8	0.001334579	0.041619093	27
700.6	0.001425624	0.041875688	28
1353.8	0.001452291	0.041875688	29
1002.8	0.001492008	0.041875688	30
1026.8	0.001729682	0.044759748	31
698.4	0.001731972	0.044759748	32
1408.8	0.001754242	0.044759748	33
643.4	0.002149808	0.053239371	34
715.6	0.002425951	0.056350901	35
1339	0.002469753	0.056350901	36
861.6	0.002478389	0.056350901	37
1307	0.002554023	0.056350901	38
1025.8	0.002686084	0.056350901	39
773.6	0.002790904	0.056350901	40
716.6	0.002801531	0.056350901	41
699.6	0.002810853	0.056350901	42
723.4	0.003004853	0.058839206	43
766.6	0.003103996	0.059399187	44
772.6	0.003284206	0.06145114	45
768.6	0.003455945	0.061567875	46
931.8	0.003551532	0.061567875	47
999.6	0.003578562	0.061567875	48
1103.8	0.003582929	0.061567875	49
1340.8	0.003670866	0.061817384	50
1107.8	0.003995479	0.064389524	51

TABLE 1

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1019.6	0.004017488	0.064389524	52
1410	0.004086356	0.064389524	53
869.6	0.004199713	0.064389524	54
1163.8	0.004238391	0.064389524	55
721.4	0.004358462	0.064389524	56
807.6	0.004482771	0.064389524	57
771.6	0.004500308	0.064389524	58
1052.8	0.004511855	0.064389524	59
675.6	0.004651766	0.064430418	60
806.6	0.004704109	0.064430418	61
914.8	0.004744283	0.064430418	62
1104.8	0.005060788	0.065213547	63
717.6	0.005155264	0.065213547	64
722.6	0.00526523	0.065213547	65
862.6	0.005340501	0.065213547	66
805.6	0.005349834	0.065213547	67
1050.6	0.005364941	0.065213547	68
665.6	0.005445806	0.065213547	69
754.6	0.005580423	0.065213547	70
1138.8	0.00567467	0.065213547	71
1301.2	0.005680504	0.065213547	72
1304.8	0.005689961	0.065213547	73
729.6	0.005794904	0.065213547	74
736.6	0.005808808	0.065213547	75
633.4	0.006146808	0.067780331	76
848.6	0.006290275	0.067780331	77
929.8	0.006342437	0.067780331	78
1094.8	0.006699288	0.067780331	79
932.8	0.006705312	0.067780331	80
652.4	0.006711223	0.067780331	81
913.8	0.006713914	0.067780331	82
1018.6	0.006772901	0.067780331	83
860.6	0.006797605	0.067780331	84
650.4	0.006974797	0.067780331	85
884.6	0.00709371	0.067780331	86
930.8	0.007263855	0.067780331	87
1305.8	0.00737985	0.067780331	88
598.4	0.007391121	0.067780331	89
794.6	0.007471607	0.067780331	90
917.8	0.007544547	0.067780331	91
739.6	0.007592763	0.067780331	92
800.6	0.007606694	0.067780331	93
850.6	0.007621041	0.067780331	94
793.4	0.007695199	0.067780331	95
902.6	0.00774748	0.067780331	96
651.4	0.007808423	0.067780331	97
1010.6	0.007941569	0.068232663	98
535.4	0.008030905	0.068303253	99
653.4	0.008711428	0.072710869	100
776.6	0.00872185	0.072710869	101
907.6	0.009010534	0.074187321	102

TABLE 1

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1098.8	0.009075171	0.074187321	103
774.6	0.009504284	0.075593102	104
889.6	0.009520363	0.075593102	105
718.6	0.009606799	0.075593102	106
1127.8	0.009722129	0.075593102	107
918.6	0.009759729	0.075593102	108
767.6	0.010017616	0.075593102	109
775.6	0.010168334	0.075593102	110
1106.8	0.010269779	0.075593102	111
976.6	0.010304106	0.075593102	112
1108.8	0.010350227	0.075593102	113
896.8	0.010390597	0.075593102	114
975.8	0.010442894	0.075593102	115
1029.8	0.010533628	0.075593102	116
942.8	0.010574246	0.075593102	117
750.6	0.010593808	0.075593102	118
883.6	0.010833921	0.076656821	119
1188.8	0.011156664	0.078282592	120
1355	0.011330966	0.078848538	121
912.6	0.01158718	0.079617126	122
1121.8	0.01163053	0.079617126	123
755.6	0.011906893	0.080851647	124
897.6	0.012012452	0.080915874	125
1017.8	0.012326917	0.082375111	126
1005.4	0.012728495	0.084198141	127
916.8	0.012799717	0.084198141	128
1061.6	0.013139295	0.085684368	129
1352	0.013384749	0.085684368	130
618.4	0.013391364	0.085684368	131
690.4	0.013476799	0.085684368	132
1112.8	0.013534467	0.085684368	133
795.6	0.014043383	0.088242748	134
758.6	0.014487373	0.090358285	135
1218.6	0.014715208	0.090711257	136
895.6	0.014814871	0.090711257	137
649.4	0.01491408	0.090711257	138
1302	0.015235418	0.090711257	139
1016.8	0.015284527	0.090711257	140
1015.8	0.015352499	0.090711257	141
777.6	0.015486559	0.090711257	142
666.2	0.015560462	0.090711257	143
1114.8	0.015666544	0.090711257	144
939.6	0.015735653	0.090711257	145
1164.8	0.015802457	0.090711257	146
763.6	0.015867844	0.090711257	147
1105.8	0.015944497	0.090711257	148
728.6	0.016421999	0.091852508	149
1028.8	0.016422682	0.091852508	150
820.6	0.016472362	0.091852508	151
928.6	0.016727571	0.092370571	152
757.6	0.016790261	0.092370571	153

TABLE 1

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1060.6	0.01689438	0.092370571	154
790.6	0.017037191	0.092550418	155
792.6	0.017194104	0.092804077	156
783.6	0.017391152	0.093269745	157
863.6	0.018261447	0.096756559	158
796.6	0.018271132	0.096756559	159
859.6	0.019050218	0.099924166	160
1097.8	0.01910664	0.099924166	161
719.6	0.019789389	0.102684971	162
905.6	0.019878444	0.102684971	163
751.6	0.020427697	0.104878786	164
667.4	0.020711949	0.105693703	165
725.6	0.021835078	0.110304434	166
882.8	0.021970108	0.110304434	167
635.4	0.022008486	0.110304434	168
981.8	0.02245168	0.11185985	169
1143.8	0.022665227	0.112259534	170
710.4	0.023421406	0.115326453	171
619.4	0.02416262	0.117695337	172
745.6	0.024213769	0.117695337	173
1013.8	0.024321839	0.117695337	174
898.6	0.024620488	0.118459718	175
911.6	0.025051982	0.118532871	176
1024.8	0.02510821	0.118532871	177
1265.8	0.025223834	0.118532871	178
676.6	0.025226912	0.118532871	179
1003.8	0.025339569	0.118532871	180
1111.8	0.025591087	0.119048038	181
1209.8	0.026360702	0.121954456	182
586.4	0.02666763	0.122700242	183
572.4	0.026854874	0.122890237	184
1084.8	0.02751246	0.12521887	185
901.6	0.027730621	0.12553324	186
885.6	0.02832074	0.126719887	187
1053.8	0.028530761	0.126719887	188
534.4	0.028718371	0.126719887	189
1141.8	0.028856744	0.126719887	190
1266.8	0.028907656	0.126719887	191
692.6	0.029102169	0.126719887	192
906.6	0.029250393	0.126719887	193
756.6	0.029339584	0.126719887	194
695.6	0.02938451	0.126719887	195
500.4	0.029644421	0.126719887	196
1014.8	0.029670962	0.126719887	197
927.8	0.029798738	0.126719887	198
915.8	0.030093535	0.127330436	199
1123.8	0.030283903	0.127495233	200
724.6	0.030920364	0.128103328	201
674.4	0.030939542	0.128103328	202
873.6	0.030951153	0.128103328	203
1058.8	0.031036911	0.128103328	204

TABLE 1

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1086	0.031300891	0.128144392	205
759.6	0.031351241	0.128144392	206
778.6	0.03196902	0.130038238	207
744.6	0.032151672	0.130152442	208
1012.8	0.032324929	0.130227706	209
1208.8	0.03260628	0.130735654	210
1000.8	0.032815281	0.13095008	211
579.4	0.033286959	0.131731806	212
1093.8	0.033472039	0.131731806	213
654.4	0.03348053	0.131731806	214
1139.8	0.03414909	0.132645634	215
523.2	0.034183495	0.132645634	216
696.4	0.034243589	0.132645634	217
623.4	0.034342931	0.132645634	218
890.8	0.035502156	0.136297139	219
691.4	0.035612079	0.136297139	220
632.4	0.036240368	0.138074163	221
977.6	0.036694208	0.139173527	222
614.4	0.037312827	0.140885205	223
821.6	0.037576998	0.141249253	224
640.6	0.038153705	0.142333729	225
770.6	0.03820359	0.142333729	226
952.8	0.038546936	0.142950631	227
1198.8	0.038708722	0.142950631	228
769.6	0.039025464	0.143491008	229
1070.6	0.039420382	0.144312875	230
781.6	0.039935951	0.145291805	231
971.8	0.040083658	0.145291805	232
933.8	0.040235909	0.145291805	233
1199.8	0.040378007	0.145291805	234
784.6	0.041030638	0.147011904	235
802.6	0.041428197	0.147790551	236
1066.8	0.041599003	0.147790551	237
505.4	0.042152476	0.149127667	238
647.4	0.042450558	0.149553849	239
903.6	0.042824497	0.149960617	240
1008.4	0.042922219	0.149960617	241
826.6	0.043132407	0.150072258	242
1076.8	0.043542345	0.15087512	243
1410.8	0.044644228	0.154059182	244
1083.8	0.044873126	0.154111341	245
668.4	0.045280664	0.154111341	246
631.4	0.045361023	0.154111341	247
1150.8	0.045391464	0.154111341	248
782.6	0.046474853	0.157155927	249
730.6	0.047329196	0.158830656	250
1308.6	0.047527379	0.158830656	251
785.6	0.047721969	0.158830656	252
1031.8	0.047724651	0.158830656	253
1122.8	0.048561393	0.160299131	254
963.6	0.048600522	0.160299131	255

TABLE 1**1_GreenCTvsRedMS**

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1200.8	0.049517765	0.160299131	256
1142.8	0.049532186	0.160299131	257
1063.8	0.049660516	0.160299131	258
693.4	0.049693063	0.160299131	259
1201.8	0.049729023	0.160299131	260
583.4	0.04976117	0.160299131	261
1078.8	0.049879302	0.160299131	262

TABLE 2

3_GreenCTvsGreenMS

MZ value	Pvalue-GreenCT-GreenMS	GreenCT_GreenMS_FDR	rank
1149.8	0.010516952	0.588663311	1
737.6	0.010694298	0.588663311	2
1097.8	0.012174285	0.588663311	3
675.6	0.012209835	0.588663311	4
907.6	0.012321236	0.588663311	5
848.6	0.013435832	0.588663311	6
1164.8	0.01438997	0.588663311	7
1094.8	0.020923175	0.588663311	8
945.8	0.024582728	0.588663311	9
981.8	0.025117133	0.588663311	10
940.6	0.025434379	0.588663311	11
712.6	0.026736224	0.588663311	12
1095.8	0.027011766	0.588663311	13
967.6	0.029329489	0.588663311	14
946.6	0.03022588	0.588663311	15
736.6	0.031314997	0.588663311	16
1352.8	0.03153644	0.588663311	17
735.6	0.032446136	0.588663311	18
1075.8	0.034091133	0.588663311	19
906.6	0.035634263	0.588663311	20
982.6	0.03784704	0.588663311	21
1103.8	0.038456746	0.588663311	22
1096.8	0.038462429	0.588663311	23
1107.8	0.039508217	0.588663311	24
809.6	0.040283323	0.588663311	25
749.6	0.040884105	0.588663311	26
897.6	0.042161796	0.588663311	27
774.6	0.04252857	0.588663311	28
1076.8	0.042638629	0.588663311	29
711.6	0.04316787	0.588663311	30
937.6	0.043669483	0.588663311	31
700.6	0.044668702	0.588663311	32
820.6	0.045683205	0.588663311	33
960.8	0.046200018	0.588663311	34
1051.8	0.04636867	0.588663311	35
1078.8	0.047072045	0.588663311	36
936.6	0.047511928	0.588663311	37
775.6	0.048585106	0.588663311	38

TABLE 2

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
726.6	0	0	1
727.6	0	0	1
738.6	0	0	1
739.6	0	0	1
861.6	0	0	1
1051.8	0	0	1
1052.8	0	0	1
1099.8	0	0	1
1100.8	0	0	1
1101.8	0	0	1
1102.8	0	0	1
1336.8	0	0	1
859.6	2.13E-14	1.38E-12	13
1104.8	2.40E-14	1.44E-12	14
1337.8	1.34E-13	7.53E-12	15
717.6	3.94E-13	2.08E-11	16
736.6	1.04E-12	5.17E-11	17
716.6	2.40E-12	1.12E-10	18
1352.8	4.53E-12	2.01E-10	19
862.6	3.63E-11	1.53E-09	20
715.6	4.44E-11	1.78E-09	21
1050.6	9.56E-11	3.66E-09	22
1148.8	1.76E-10	6.44E-09	23
1149.8	4.86E-10	1.70E-08	24
699.6	1.68E-09	5.65E-08	25
1301.2	3.92E-09	1.27E-07	26
1105.8	5.10E-09	1.59E-07	27
1339.8	5.57E-09	1.67E-07	28
1353.8	7.58E-09	2.20E-07	29
1012.8	9.42E-09	2.64E-07	30
1084.8	1.06E-08	2.88E-07	31
737.6	1.39E-08	3.67E-07	32
774.6	1.60E-08	4.09E-07	33
1013.8	2.05E-08	5.09E-07	34
858.6	2.29E-08	5.51E-07	35
930.8	3.67E-08	8.58E-07	36
873.6	4.14E-08	9.43E-07	37
857.6	7.42E-08	1.64E-06	38
975.8	9.38E-08	2.03E-06	39
1114.8	1.61E-07	3.39E-06	40
643.4	1.77E-07	3.64E-06	41
1113.8	3.73E-07	7.48E-06	42
775.6	4.86E-07	9.40E-06	43
1339	4.94E-07	9.40E-06	44
1496.8	5.03E-07	9.40E-06	45
931.8	5.90E-07	1.08E-05	46
735.6	7.09E-07	1.27E-05	47
1243.8	1.67E-06	2.92E-05	48
760.6	1.70E-06	2.92E-05	49
1072.8	2.44E-06	4.03E-05	50
684.6	2.44E-06	4.03E-05	51

TABLE 2

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
728.6	3.32E-06	5.37E-05	52
1212.8	3.57E-06	5.68E-05	53
1014.8	3.77E-06	5.88E-05	54
1111.8	3.84E-06	5.88E-05	55
860.6	4.54E-06	6.82E-05	56
1460	5.35E-06	7.91E-05	57
1269.8	7.17E-06	0.000104054	58
956.6	7.68E-06	0.000109592	59
1127.8	8.22E-06	0.000115313	60
1086	9.50E-06	0.000131179	61
836.6	1.10E-05	0.000149224	62
1000.8	1.98E-05	0.000265199	63
863.6	2.26E-05	0.00029703	64
957.6	2.30E-05	0.000297557	65
1237.8	2.82E-05	0.000359983	66
1260.6	2.93E-05	0.000367034	67
1121.8	2.96E-05	0.000367034	68
837.6	3.13E-05	0.000381968	69
680.6	3.20E-05	0.000385208	70
1135.6	3.49E-05	0.00041398	71
1083.8	3.62E-05	0.000423016	72
1091.8	3.98E-05	0.000459293	73
698.4	4.05E-05	0.000460696	74
1103.8	4.36E-05	0.000489973	75
939.6	4.94E-05	0.000546838	76
840.6	5.10E-05	0.00055782	77
718.6	5.24E-05	0.000565855	78
1001.8	6.07E-05	0.000646661	79
959.8	8.13E-05	0.000855521	80
1408.8	8.38E-05	0.000871525	81
1093.8	8.51E-05	0.000874247	82
1218.6	8.80E-05	0.000892967	83
877.6	0.000108332	0.001085902	84
1177.8	0.000113322	0.001122552	85
1112.8	0.000128161	0.00125479	86
1055.8	0.000135349	0.001309928	87
1269	0.000140486	0.001332387	88
1115.8	0.000140834	0.001332387	89
1461	0.000154301	0.001443567	90
725.6	0.000182334	0.001687092	91
679.6	0.000188774	0.001727694	92
1019.6	0.000193273	0.001749852	93
833.4	0.000205174	0.001837838	94
824.6	0.000233838	0.002072546	95
972.8	0.000249444	0.002175391	96
1469.8	0.000250609	0.002175391	97
823.6	0.000274769	0.002360767	98
973.8	0.0002998	0.002549818	99
1136.8	0.000327677	0.002759038	100
1018.6	0.000357902	0.002983698	101
1082.8	0.000385016	0.003171661	102

TABLE 2

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1425.8	0.000387982	0.003171661	103
1098.8	0.000448551	0.003627948	104
1107.8	0.000452416	0.003627948	105
1361	0.000458077	0.00363869	106
1130.8	0.000484867	0.003815494	107
1053.8	0.000558273	0.004352462	108
685.6	0.000604039	0.004666066	109
1475	0.000661508	0.005063544	110
1061.6	0.000674197	0.005114176	111
1090.8	0.000716737	0.005388328	112
1015.8	0.000724808	0.005400784	113
749.6	0.000792416	0.005852755	114
1106.8	0.000976264	0.007090408	115
1178.8	0.000976826	0.007090408	116
835.6	0.000986555	0.007099823	117
1259	0.000997527	0.007117945	118
1270.8	0.001018044	0.007203305	119
866.6	0.001132518	0.007946501	120
955.8	0.00120993	0.008419511	121
678.6	0.00125109	0.00863457	122
1219.8	0.001348479	0.009231053	123
1368	0.001403848	0.009532578	124
1054.8	0.001529685	0.010262114	125
1129.8	0.001535661	0.010262114	126
1250.8	0.001617051	0.010720924	127
693.4	0.001688166	0.011030284	128
1205.6	0.001701328	0.011030284	129
1057.8	0.001705101	0.011030284	130
867.6	0.001716113	0.011030284	131
901.6	0.001761585	0.011236778	132
1352	0.001812158	0.011472456	133
1373	0.001864552	0.011716066	134
1008.4	0.001879187	0.011720557	135
1213.6	0.001897489	0.011747688	136
1302	0.001945305	0.011955819	137
992.8	0.002025108	0.012356094	138
1309.8	0.002060135	0.012479378	139
1211.8	0.002187367	0.013155449	140
1340.8	0.002218008	0.013245127	141
1244.8	0.002258269	0.013390581	142
1194.4	0.002310419	0.013604005	143
1058.8	0.002407758	0.014078696	144
1372	0.002480751	0.014405464	145
970.8	0.002547598	0.014692311	146
1305.8	0.002628978	0.014989358	147
1221.6	0.002647798	0.014989358	148
960.8	0.002652511	0.014989358	149
1357	0.002812906	0.015728564	150
999.6	0.002820681	0.015728564	151
1361.8	0.003001361	0.01655009	152
984.8	0.00300732	0.01655009	153

TABLE 2

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1028.8	0.003070744	0.016789395	154
1308.6	0.003118175	0.016938732	155
1002.8	0.003202485	0.017285205	156
1410	0.003249556	0.017427556	157
1063.8	0.003480569	0.018468204	158
1252.6	0.003487464	0.018468204	159
1251.8	0.004174483	0.021968217	160
1358	0.004384912	0.022932273	161
852.6	0.004545371	0.023624707	162
1275.4	0.004640945	0.023901569	163
719.6	0.004655413	0.023901569	164
723.4	0.004705291	0.024011244	165
724.6	0.004843062	0.024565412	166
1377.6	0.004880551	0.024607331	167
784.6	0.00499761	0.025047543	168
974.8	0.005071283	0.025266392	169
870.6	0.005193521	0.025723206	170
1277	0.005335506	0.026271908	171
1179.8	0.00541548	0.026510662	172
844.6	0.005471784	0.026631456	173
690.4	0.005564191	0.026925569	174
994.6	0.00560664	0.026975948	175
776.6	0.005970627	0.028564021	176
1367	0.006076524	0.028906403	177
792.6	0.006130197	0.0289979	178
1278.8	0.006168818	0.029017569	179
1204.8	0.006217381	0.029083525	180
1297	0.006468126	0.030089293	181
1029.8	0.006821913	0.031560716	182
1230.8	0.006880631	0.031658425	183
1004.6	0.006957972	0.031840286	184
1010.6	0.007057456	0.032120964	185
1449.2	0.007128078	0.032267964	186
1461.8	0.007390263	0.033275942	187
969.8	0.007569017	0.033899534	188
910.6	0.00780763	0.034783197	189
834.6	0.007872135	0.034885986	190
756.6	0.008049022	0.035483124	191
932.8	0.008184876	0.035894091	192
998.8	0.008389687	0.036601641	193
1003.8	0.009203363	0.039944495	194
1076.8	0.009406506	0.040468655	195
971.8	0.009438429	0.040468655	196
1128.8	0.009468319	0.040468655	197
1141.8	0.009661086	0.041084013	198
1108.8	0.009821541	0.041556471	199
1355	0.009990506	0.041916523	200
1070.6	0.010006201	0.041916523	201
1188.8	0.010081681	0.042023641	202
697.6	0.010334563	0.042865526	203
872.6	0.01060412	0.043767987	204

TABLE 2

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1041.8	0.010831549	0.044488607	205
1387	0.010965909	0.044821823	206
1410.8	0.011541748	0.046947594	207
1371	0.011758573	0.047599609	208
991.6	0.011916923	0.047781317	209
1214.8	0.011916956	0.047781317	210
761.6	0.012895363	0.051459221	211
1247.8	0.013106753	0.051972806	212
668.4	0.013147515	0.051972806	213
889.6	0.013906548	0.05471642	214
1035.6	0.014401275	0.056399414	215
850.6	0.016290257	0.063418308	216
1040.8	0.016344148	0.063418308	217
1266.8	0.016448866	0.063531859	218
1217.8	0.016724277	0.064267861	219
839.4	0.016792078	0.064267861	220
793.4	0.016888931	0.064346065	221
853.6	0.017038738	0.064624403	222
868.6	0.017463642	0.065938952	223
596.6	0.017724189	0.066112198	224
909.8	0.017756606	0.066112198	225
1220.8	0.01782211	0.066112198	226
1167.6	0.017823597	0.066112198	227
871.6	0.018240653	0.067362411	228
1027.8	0.018489054	0.067981589	229
1397.6	0.018603953	0.068106645	230
683.4	0.018806284	0.068549313	231
1056.8	0.019249725	0.069863228	232
1281.8	0.019690587	0.071156543	233
1125.8	0.019993409	0.071942096	234
1267.8	0.020904296	0.074899647	235
1326.2	0.021029146	0.075027714	236
1089.8	0.021262075	0.075538679	237
1304.8	0.021368711	0.075559148	238
874.6	0.021447312	0.075559148	239
722.6	0.022838986	0.080126777	240
1030.8	0.02304394	0.080259219	241
789.6	0.023067376	0.080259219	242
635.4	0.023661359	0.081987097	243
1095.8	0.024061694	0.082713238	244
1369	0.024067391	0.082713238	245
1271.6	0.024513952	0.083905479	246
794.6	0.024896135	0.084718967	247
831.6	0.024952855	0.084718967	248
633.4	0.025231924	0.085322409	249
806.6	0.026241755	0.088171883	250
1360	0.026320342	0.088171883	251
1123.8	0.026388734	0.088171883	252
595.4	0.027161366	0.090394743	253
1232.8	0.027574249	0.09140755	254
705.4	0.027965584	0.092341262	255

TABLE 2

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
997.8	0.028209371	0.092782386	256
985.8	0.029085909	0.095293132	257
1311.8	0.029334189	0.095734059	258
1277.8	0.029882301	0.097146322	259
1254.6	0.030338745	0.09793249	260
1017.8	0.030356746	0.09793249	261
922.6	0.030584535	0.098173842	262
1370	0.030738603	0.098173842	263
800.6	0.030781347	0.098173842	264
987.8	0.030947672	0.098331849	265
1406	0.031242579	0.098895681	266
700.6	0.031590198	0.099621524	267
634.4	0.032937941	0.103484127	268
1498	0.0331626	0.103802636	269
1155.8	0.03457681	0.107828423	270
1092.8	0.034938265	0.108553575	271
1026.8	0.035354865	0.109444105	272
1298	0.035817744	0.110470843	273
993.8	0.035984694	0.110580703	274
721.4	0.037500883	0.114820886	275
1124.8	0.037796694	0.115307305	276
600.4	0.038201667	0.115925758	277
832.6	0.038274775	0.115925758	278
940.6	0.038422234	0.115955272	279
788.6	0.03868091	0.116319022	280
1412.8	0.039037546	0.116764521	281
1189.8	0.039124007	0.116764521	282
912.6	0.039245082	0.116764521	283
914.8	0.039875557	0.118222603	284
1209.8	0.040349283	0.119011231	285
1393.6	0.040424242	0.119011231	286
928.6	0.043103166	0.126455978	287
1031.8	0.043938099	0.128457913	288
795.6	0.044153747	0.128641714	289
805.6	0.046144557	0.133284686	290
1163.8	0.046192023	0.133284686	291
1233.8	0.046222243	0.133284686	292
843.6	0.046445895	0.133472504	293
766.6	0.047113959	0.134931815	294
838.6	0.047650518	0.135748821	295
1246.8	0.047721676	0.135748821	296
1047.8	0.048887006	0.138388799	297
902.6	0.048978459	0.138388799	298
807.6	0.049220845	0.13855611	299
650.4	0.049366785	0.13855611	300

TABLE 2

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
711.6	1.30E-05	0.006945322	1
726.6	1.65E-05	0.006945322	2
1149.8	6.53E-05	0.018314576	3
1102.8	9.84E-05	0.020703306	4
1352.8	0.000147259	0.0227799	5
727.6	0.000162327	0.0227799	6
738.6	0.00021655	0.026047826	7
1339.8	0.000271834	0.027078525	8
1099.8	0.000289438	0.027078525	9
735.6	0.000363671	0.02804441	10
737.6	0.000366376	0.02804441	11
749.6	0.000460819	0.029733295	12
712.6	0.000482142	0.029733295	13
1148.8	0.000494378	0.029733295	14
801.6	0.00053327	0.029934202	15
868.6	0.000720329	0.037907325	16
994.6	0.000801981	0.039721648	17
1100.8	0.000874437	0.040891946	18
1101.8	0.00092826	0.040891946	19
998.8	0.000971305	0.040891946	20
1336.8	0.001152603	0.041619093	21
1113.8	0.001166009	0.041619093	22
1004.6	0.001225246	0.041619093	23
1027.8	0.00124619	0.041619093	24
1051.8	0.001256516	0.041619093	25
789.6	0.001313198	0.041619093	26
1337.8	0.001334579	0.041619093	27
700.6	0.001425624	0.041875688	28
1353.8	0.001452291	0.041875688	29
1002.8	0.001492008	0.041875688	30
1026.8	0.001729682	0.044759748	31
698.4	0.001731972	0.044759748	32
1408.8	0.001754242	0.044759748	33
643.4	0.002149808	0.053239371	34
715.6	0.002425951	0.056350901	35
1339	0.002469753	0.056350901	36
861.6	0.002478389	0.056350901	37
1307	0.002554023	0.056350901	38
1025.8	0.002686084	0.056350901	39
773.6	0.002790904	0.056350901	40
716.6	0.002801531	0.056350901	41
699.6	0.002810853	0.056350901	42
723.4	0.003004853	0.058839206	43
766.6	0.003103996	0.059399187	44
772.6	0.003284206	0.06145114	45
768.6	0.003455945	0.061567875	46
931.8	0.003551532	0.061567875	47
999.6	0.003578562	0.061567875	48
1103.8	0.003582929	0.061567875	49
1340.8	0.003670866	0.061817384	50
1107.8	0.003995479	0.064389524	51

TABLE 2

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1019.6	0.004017488	0.064389524	52
1410	0.004086356	0.064389524	53
869.6	0.004199713	0.064389524	54
1163.8	0.004238391	0.064389524	55
721.4	0.004358462	0.064389524	56
807.6	0.004482771	0.064389524	57
771.6	0.004500308	0.064389524	58
1052.8	0.004511855	0.064389524	59
675.6	0.004651766	0.064430418	60
806.6	0.004704109	0.064430418	61
914.8	0.004744283	0.064430418	62
1104.8	0.005060788	0.065213547	63
717.6	0.005155264	0.065213547	64
722.6	0.00526523	0.065213547	65
862.6	0.005340501	0.065213547	66
805.6	0.005349834	0.065213547	67
1050.6	0.005364941	0.065213547	68
665.6	0.005445806	0.065213547	69
754.6	0.005580423	0.065213547	70
1138.8	0.00567467	0.065213547	71
1301.2	0.005680504	0.065213547	72
1304.8	0.005689961	0.065213547	73
729.6	0.005794904	0.065213547	74
736.6	0.005808808	0.065213547	75
633.4	0.006146808	0.067780331	76
848.6	0.006290275	0.067780331	77
929.8	0.006342437	0.067780331	78
1094.8	0.006699288	0.067780331	79
932.8	0.006705312	0.067780331	80
652.4	0.006711223	0.067780331	81
913.8	0.006713914	0.067780331	82
1018.6	0.006772901	0.067780331	83
860.6	0.006797605	0.067780331	84
650.4	0.006974797	0.067780331	85
884.6	0.00709371	0.067780331	86
930.8	0.007263855	0.067780331	87
1305.8	0.00737985	0.067780331	88
598.4	0.007391121	0.067780331	89
794.6	0.007471607	0.067780331	90
917.8	0.007544547	0.067780331	91
739.6	0.007592763	0.067780331	92
800.6	0.007606694	0.067780331	93
850.6	0.007621041	0.067780331	94
793.4	0.007695199	0.067780331	95
902.6	0.00774748	0.067780331	96
651.4	0.007808423	0.067780331	97
1010.6	0.007941569	0.068232663	98
535.4	0.008030905	0.068303253	99
653.4	0.008711428	0.072710869	100
776.6	0.00872185	0.072710869	101
907.6	0.009010534	0.074187321	102

TABLE 2

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1098.8	0.009075171	0.074187321	103
774.6	0.009504284	0.075593102	104
889.6	0.009520363	0.075593102	105
718.6	0.009606799	0.075593102	106
1127.8	0.009722129	0.075593102	107
918.6	0.009759729	0.075593102	108
767.6	0.010017616	0.075593102	109
775.6	0.010168334	0.075593102	110
1106.8	0.010269779	0.075593102	111
976.6	0.010304106	0.075593102	112
1108.8	0.010350227	0.075593102	113
896.8	0.010390597	0.075593102	114
975.8	0.010442894	0.075593102	115
1029.8	0.010533628	0.075593102	116
942.8	0.010574246	0.075593102	117
750.6	0.010593808	0.075593102	118
883.6	0.010833921	0.076656821	119
1188.8	0.011156664	0.078282592	120
1355	0.011330966	0.078848538	121
912.6	0.01158718	0.079617126	122
1121.8	0.01163053	0.079617126	123
755.6	0.011906893	0.080851647	124
897.6	0.012012452	0.080915874	125
1017.8	0.012326917	0.082375111	126
1005.4	0.012728495	0.084198141	127
916.8	0.012799717	0.084198141	128
1061.6	0.013139295	0.085684368	129
1352	0.013384749	0.085684368	130
618.4	0.013391364	0.085684368	131
690.4	0.013476799	0.085684368	132
1112.8	0.013534467	0.085684368	133
795.6	0.014043383	0.088242748	134
758.6	0.014487373	0.090358285	135
1218.6	0.014715208	0.090711257	136
895.6	0.014814871	0.090711257	137
649.4	0.01491408	0.090711257	138
1302	0.015235418	0.090711257	139
1016.8	0.015284527	0.090711257	140
1015.8	0.015352499	0.090711257	141
777.6	0.015486559	0.090711257	142
666.2	0.015560462	0.090711257	143
1114.8	0.015666544	0.090711257	144
939.6	0.015735653	0.090711257	145
1164.8	0.015802457	0.090711257	146
763.6	0.015867844	0.090711257	147
1105.8	0.015944497	0.090711257	148
728.6	0.016421999	0.091852508	149
1028.8	0.016422682	0.091852508	150
820.6	0.016472362	0.091852508	151
928.6	0.016727571	0.092370571	152
757.6	0.016790261	0.092370571	153

TABLE 2

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1060.6	0.01689438	0.092370571	154
790.6	0.017037191	0.092550418	155
792.6	0.017194104	0.092804077	156
783.6	0.017391152	0.093269745	157
863.6	0.018261447	0.096756559	158
796.6	0.018271132	0.096756559	159
859.6	0.019050218	0.099924166	160
1097.8	0.01910664	0.099924166	161
719.6	0.019789389	0.102684971	162
905.6	0.019878444	0.102684971	163
751.6	0.020427697	0.104878786	164
667.4	0.020711949	0.105693703	165
725.6	0.021835078	0.110304434	166
882.8	0.021970108	0.110304434	167
635.4	0.022008486	0.110304434	168
981.8	0.02245168	0.11185985	169
1143.8	0.022665227	0.112259534	170
710.4	0.023421406	0.115326453	171
619.4	0.02416262	0.117695337	172
745.6	0.024213769	0.117695337	173
1013.8	0.024321839	0.117695337	174
898.6	0.024620488	0.118459718	175
911.6	0.025051982	0.118532871	176
1024.8	0.02510821	0.118532871	177
1265.8	0.025223834	0.118532871	178
676.6	0.025226912	0.118532871	179
1003.8	0.025339569	0.118532871	180
1111.8	0.025591087	0.119048038	181
1209.8	0.026360702	0.121954456	182
586.4	0.02666763	0.122700242	183
572.4	0.026854874	0.122890237	184
1084.8	0.02751246	0.12521887	185
901.6	0.027730621	0.12553324	186
885.6	0.02832074	0.126719887	187
1053.8	0.028530761	0.126719887	188
534.4	0.028718371	0.126719887	189
1141.8	0.028856744	0.126719887	190
1266.8	0.028907656	0.126719887	191
692.6	0.029102169	0.126719887	192
906.6	0.029250393	0.126719887	193
756.6	0.029339584	0.126719887	194
695.6	0.02938451	0.126719887	195
500.4	0.029644421	0.126719887	196
1014.8	0.029670962	0.126719887	197
927.8	0.029798738	0.126719887	198
915.8	0.030093535	0.127330436	199
1123.8	0.030283903	0.127495233	200
724.6	0.030920364	0.128103328	201
674.4	0.030939542	0.128103328	202
873.6	0.030951153	0.128103328	203
1058.8	0.031036911	0.128103328	204

TABLE 2

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1086	0.031300891	0.128144392	205
759.6	0.031351241	0.128144392	206
778.6	0.03196902	0.130038238	207
744.6	0.032151672	0.130152442	208
1012.8	0.032324929	0.130227706	209
1208.8	0.03260628	0.130735654	210
1000.8	0.032815281	0.13095008	211
579.4	0.033286959	0.131731806	212
1093.8	0.033472039	0.131731806	213
654.4	0.03348053	0.131731806	214
1139.8	0.03414909	0.132645634	215
523.2	0.034183495	0.132645634	216
696.4	0.034243589	0.132645634	217
623.4	0.034342931	0.132645634	218
890.8	0.035502156	0.136297139	219
691.4	0.035612079	0.136297139	220
632.4	0.036240368	0.138074163	221
977.6	0.036694208	0.139173527	222
614.4	0.037312827	0.140885205	223
821.6	0.037576998	0.141249253	224
640.6	0.038153705	0.142333729	225
770.6	0.03820359	0.142333729	226
952.8	0.038546936	0.142950631	227
1198.8	0.038708722	0.142950631	228
769.6	0.039025464	0.143491008	229
1070.6	0.039420382	0.144312875	230
781.6	0.039935951	0.145291805	231
971.8	0.040083658	0.145291805	232
933.8	0.040235909	0.145291805	233
1199.8	0.040378007	0.145291805	234
784.6	0.041030638	0.147011904	235
802.6	0.041428197	0.147790551	236
1066.8	0.041599003	0.147790551	237
505.4	0.042152476	0.149127667	238
647.4	0.042450558	0.149553849	239
903.6	0.042824497	0.149960617	240
1008.4	0.042922219	0.149960617	241
826.6	0.043132407	0.150072258	242
1076.8	0.043542345	0.15087512	243
1410.8	0.044644228	0.154059182	244
1083.8	0.044873126	0.154111341	245
668.4	0.045280664	0.154111341	246
631.4	0.045361023	0.154111341	247
1150.8	0.045391464	0.154111341	248
782.6	0.046474853	0.157155927	249
730.6	0.047329196	0.158830656	250
1308.6	0.047527379	0.158830656	251
785.6	0.047721969	0.158830656	252
1031.8	0.047724651	0.158830656	253
1122.8	0.048561393	0.160299131	254
963.6	0.048600522	0.160299131	255

TABLE 2**1_GreenCTvsRedMS**

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1200.8	0.049517765	0.160299131	256
1142.8	0.049532186	0.160299131	257
1063.8	0.049660516	0.160299131	258
693.4	0.049693063	0.160299131	259
1201.8	0.049729023	0.160299131	260
583.4	0.04976117	0.160299131	261
1078.8	0.049879302	0.160299131	262

TABLE 3

3_GreenCTvsGreenMS

MZ value	P value MS versus CTRL	FDR	rank
1149.8	0.010516952	0.588663311	1
737.6	0.010694298	0.588663311	2
1097.8	0.012174285	0.588663311	3
675.6	0.012209835	0.588663311	4
907.6	0.012321236	0.588663311	5
848.6	0.013435832	0.588663311	6
1164.8	0.01438997	0.588663311	7
1094.8	0.020923175	0.588663311	8
945.8	0.024582728	0.588663311	9
981.8	0.025117133	0.588663311	10
940.6	0.025434379	0.588663311	11
712.6	0.026736224	0.588663311	12
1095.8	0.027011766	0.588663311	13
967.6	0.029329489	0.588663311	14
946.6	0.03022588	0.588663311	15
736.6	0.031314997	0.588663311	16
1352.8	0.03153644	0.588663311	17
735.6	0.032446136	0.588663311	18
1075.8	0.034091133	0.588663311	19
906.6	0.035634263	0.588663311	20
982.6	0.03784704	0.588663311	21
1103.8	0.038456746	0.588663311	22
1096.8	0.038462429	0.588663311	23
1107.8	0.039508217	0.588663311	24
809.6	0.040283323	0.588663311	25
749.6	0.040884105	0.588663311	26
897.6	0.042161796	0.588663311	27
774.6	0.04252857	0.588663311	28
1076.8	0.042638629	0.588663311	29
711.6	0.04316787	0.588663311	30
937.6	0.043669483	0.588663311	31
700.6	0.044668702	0.588663311	32
820.6	0.045683205	0.588663311	33
960.8	0.046200018	0.588663311	34
1051.8	0.04636867	0.588663311	35
1078.8	0.047072045	0.588663311	36
936.6	0.047511928	0.588663311	37
775.6	0.048585106	0.588663311	38

TABLE 3

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
726.6	0	0	1
727.6	0	0	1
738.6	0	0	1
739.6	0	0	1
861.6	0	0	1
1051.8	0	0	1
1052.8	0	0	1
1099.8	0	0	1
1100.8	0	0	1
1101.8	0	0	1
1102.8	0	0	1
1336.8	0	0	1
859.6	2.13E-14	1.38E-12	13
1104.8	2.40E-14	1.44E-12	14
1337.8	1.34E-13	7.53E-12	15
717.6	3.94E-13	2.08E-11	16
736.6	1.04E-12	5.17E-11	17
716.6	2.40E-12	1.12E-10	18
1352.8	4.53E-12	2.01E-10	19
862.6	3.63E-11	1.53E-09	20
715.6	4.44E-11	1.78E-09	21
1050.6	9.56E-11	3.66E-09	22
1148.8	1.76E-10	6.44E-09	23
1149.8	4.86E-10	1.70E-08	24
699.6	1.68E-09	5.65E-08	25
1301.2	3.92E-09	1.27E-07	26
1105.8	5.10E-09	1.59E-07	27
1339.8	5.57E-09	1.67E-07	28
1353.8	7.58E-09	2.20E-07	29
1012.8	9.42E-09	2.64E-07	30
1084.8	1.06E-08	2.88E-07	31
737.6	1.39E-08	3.67E-07	32
774.6	1.60E-08	4.09E-07	33
1013.8	2.05E-08	5.09E-07	34
858.6	2.29E-08	5.51E-07	35
930.8	3.67E-08	8.58E-07	36
873.6	4.14E-08	9.43E-07	37
857.6	7.42E-08	1.64E-06	38
975.8	9.38E-08	2.03E-06	39
1114.8	1.61E-07	3.39E-06	40
643.4	1.77E-07	3.64E-06	41
1113.8	3.73E-07	7.48E-06	42
775.6	4.86E-07	9.40E-06	43
1339	4.94E-07	9.40E-06	44
1496.8	5.03E-07	9.40E-06	45
931.8	5.90E-07	1.08E-05	46
735.6	7.09E-07	1.27E-05	47
1243.8	1.67E-06	2.92E-05	48
760.6	1.70E-06	2.92E-05	49
1072.8	2.44E-06	4.03E-05	50
684.6	2.44E-06	4.03E-05	51

TABLE 3**2_GreenMSvsRedMS**

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
728.6	3.32E-06	5.37E-05	52
1212.8	3.57E-06	5.68E-05	53
1014.8	3.77E-06	5.88E-05	54
1111.8	3.84E-06	5.88E-05	55
860.6	4.54E-06	6.82E-05	56
1460	5.35E-06	7.91E-05	57
1269.8	7.17E-06	0.000104054	58
956.6	7.68E-06	0.000109592	59
1127.8	8.22E-06	0.000115313	60
1086	9.50E-06	0.000131179	61
836.6	1.10E-05	0.000149224	62
1000.8	1.98E-05	0.000265199	63
863.6	2.26E-05	0.00029703	64
957.6	2.30E-05	0.000297557	65
1237.8	2.82E-05	0.000359983	66
1260.6	2.93E-05	0.000367034	67
1121.8	2.96E-05	0.000367034	68
837.6	3.13E-05	0.000381968	69
680.6	3.20E-05	0.000385208	70
1135.6	3.49E-05	0.00041398	71
1083.8	3.62E-05	0.000423016	72
1091.8	3.98E-05	0.000459293	73
698.4	4.05E-05	0.000460696	74
1103.8	4.36E-05	0.000489973	75
939.6	4.94E-05	0.000546838	76
840.6	5.10E-05	0.00055782	77
718.6	5.24E-05	0.000565855	78
1001.8	6.07E-05	0.000646661	79
959.8	8.13E-05	0.000855521	80
1408.8	8.38E-05	0.000871525	81
1093.8	8.51E-05	0.000874247	82
1218.6	8.80E-05	0.000892967	83
877.6	0.000108332	0.001085902	84
1177.8	0.000113322	0.001122552	85
1112.8	0.000128161	0.00125479	86
1055.8	0.000135349	0.001309928	87
1269	0.000140486	0.001332387	88
1115.8	0.000140834	0.001332387	89
1461	0.000154301	0.001443567	90
725.6	0.000182334	0.001687092	91
679.6	0.000188774	0.001727694	92
1019.6	0.000193273	0.001749852	93
833.4	0.000205174	0.001837838	94
824.6	0.000233838	0.002072546	95
972.8	0.000249444	0.002175391	96
1469.8	0.000250609	0.002175391	97
823.6	0.000274769	0.002360767	98
973.8	0.0002998	0.002549818	99
1136.8	0.000327677	0.002759038	100
1018.6	0.000357902	0.002983698	101
1082.8	0.000385016	0.003171661	102

TABLE 3

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1425.8	0.000387982	0.003171661	103
1098.8	0.000448551	0.003627948	104
1107.8	0.000452416	0.003627948	105
1361	0.000458077	0.00363869	106
1130.8	0.000484867	0.003815494	107
1053.8	0.000558273	0.004352462	108
685.6	0.000604039	0.004666066	109
1475	0.000661508	0.005063544	110
1061.6	0.000674197	0.005114176	111
1090.8	0.000716737	0.005388328	112
1015.8	0.000724808	0.005400784	113
749.6	0.000792416	0.005852755	114
1106.8	0.000976264	0.007090408	115
1178.8	0.000976826	0.007090408	116
835.6	0.000986555	0.007099823	117
1259	0.000997527	0.007117945	118
1270.8	0.001018044	0.007203305	119
866.6	0.001132518	0.007946501	120
955.8	0.00120993	0.008419511	121
678.6	0.00125109	0.00863457	122
1219.8	0.001348479	0.009231053	123
1368	0.001403848	0.009532578	124
1054.8	0.001529685	0.010262114	125
1129.8	0.001535661	0.010262114	126
1250.8	0.001617051	0.010720924	127
693.4	0.001688166	0.011030284	128
1205.6	0.001701328	0.011030284	129
1057.8	0.001705101	0.011030284	130
867.6	0.001716113	0.011030284	131
901.6	0.001761585	0.011236778	132
1352	0.001812158	0.011472456	133
1373	0.001864552	0.011716066	134
1008.4	0.001879187	0.011720557	135
1213.6	0.001897489	0.011747688	136
1302	0.001945305	0.011955819	137
992.8	0.002025108	0.012356094	138
1309.8	0.002060135	0.012479378	139
1211.8	0.002187367	0.013155449	140
1340.8	0.002218008	0.013245127	141
1244.8	0.002258269	0.013390581	142
1194.4	0.002310419	0.013604005	143
1058.8	0.002407758	0.014078696	144
1372	0.002480751	0.014405464	145
970.8	0.002547598	0.014692311	146
1305.8	0.002628978	0.014989358	147
1221.6	0.002647798	0.014989358	148
960.8	0.002652511	0.014989358	149
1357	0.002812906	0.015728564	150
999.6	0.002820681	0.015728564	151
1361.8	0.003001361	0.01655009	152
984.8	0.00300732	0.01655009	153

TABLE 3**2_GreenMSvsRedMS**

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1028.8	0.003070744	0.016789395	154
1308.6	0.003118175	0.016938732	155
1002.8	0.003202485	0.017285205	156
1410	0.003249556	0.017427556	157
1063.8	0.003480569	0.018468204	158
1252.6	0.003487464	0.018468204	159
1251.8	0.004174483	0.021968217	160
1358	0.004384912	0.022932273	161
852.6	0.004545371	0.023624707	162
1275.4	0.004640945	0.023901569	163
719.6	0.004655413	0.023901569	164
723.4	0.004705291	0.024011244	165
724.6	0.004843062	0.024565412	166
1377.6	0.004880551	0.024607331	167
784.6	0.00499761	0.025047543	168
974.8	0.005071283	0.025266392	169
870.6	0.005193521	0.025723206	170
1277	0.005335506	0.026271908	171
1179.8	0.00541548	0.026510662	172
844.6	0.005471784	0.026631456	173
690.4	0.005564191	0.026925569	174
994.6	0.00560664	0.026975948	175
776.6	0.005970627	0.028564021	176
1367	0.006076524	0.028906403	177
792.6	0.006130197	0.0289979	178
1278.8	0.006168818	0.029017569	179
1204.8	0.006217381	0.029083525	180
1297	0.006468126	0.030089293	181
1029.8	0.006821913	0.031560716	182
1230.8	0.006880631	0.031658425	183
1004.6	0.006957972	0.031840286	184
1010.6	0.007057456	0.032120964	185
1449.2	0.007128078	0.032267964	186
1461.8	0.007390263	0.033275942	187
969.8	0.007569017	0.033899534	188
910.6	0.00780763	0.034783197	189
834.6	0.007872135	0.034885986	190
756.6	0.008049022	0.035483124	191
932.8	0.008184876	0.035894091	192
998.8	0.008389687	0.036601641	193
1003.8	0.009203363	0.039944495	194
1076.8	0.009406506	0.040468655	195
971.8	0.009438429	0.040468655	196
1128.8	0.009468319	0.040468655	197
1141.8	0.009661086	0.041084013	198
1108.8	0.009821541	0.041556471	199
1355	0.009990506	0.041916523	200
1070.6	0.010006201	0.041916523	201
1188.8	0.010081681	0.042023641	202
697.6	0.010334563	0.042865526	203
872.6	0.01060412	0.043767987	204

TABLE 3

2_GreenMSvsRedMS

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
1041.8	0.010831549	0.044488607	205
1387	0.010965909	0.044821823	206
1410.8	0.011541748	0.046947594	207
1371	0.011758573	0.047599609	208
991.6	0.011916923	0.047781317	209
1214.8	0.011916956	0.047781317	210
761.6	0.012895363	0.051459221	211
1247.8	0.013106753	0.051972806	212
668.4	0.013147515	0.051972806	213
889.6	0.013906548	0.05471642	214
1035.6	0.014401275	0.056399414	215
850.6	0.016290257	0.063418308	216
1040.8	0.016344148	0.063418308	217
1266.8	0.016448866	0.063531859	218
1217.8	0.016724277	0.064267861	219
839.4	0.016792078	0.064267861	220
793.4	0.016888931	0.064346065	221
853.6	0.017038738	0.064624403	222
868.6	0.017463642	0.065938952	223
596.6	0.017724189	0.066112198	224
909.8	0.017756606	0.066112198	225
1220.8	0.01782211	0.066112198	226
1167.6	0.017823597	0.066112198	227
871.6	0.018240653	0.067362411	228
1027.8	0.018489054	0.067981589	229
1397.6	0.018603953	0.068106645	230
683.4	0.018806284	0.068549313	231
1056.8	0.019249725	0.069863228	232
1281.8	0.019690587	0.071156543	233
1125.8	0.019993409	0.071942096	234
1267.8	0.020904296	0.074899647	235
1326.2	0.021029146	0.075027714	236
1089.8	0.021262075	0.075538679	237
1304.8	0.021368711	0.075559148	238
874.6	0.021447312	0.075559148	239
722.6	0.022838986	0.080126777	240
1030.8	0.02304394	0.080259219	241
789.6	0.023067376	0.080259219	242
635.4	0.023661359	0.081987097	243
1095.8	0.024061694	0.082713238	244
1369	0.024067391	0.082713238	245
1271.6	0.024513952	0.083905479	246
794.6	0.024896135	0.084718967	247
831.6	0.024952855	0.084718967	248
633.4	0.025231924	0.085322409	249
806.6	0.026241755	0.088171883	250
1360	0.026320342	0.088171883	251
1123.8	0.026388734	0.088171883	252
595.4	0.027161366	0.090394743	253
1232.8	0.027574249	0.09140755	254
705.4	0.027965584	0.092341262	255

TABLE 3**2_GreenMSvsRedMS**

MZ value	Pvalue-GreenMS-RedMS	GreenMS_RedMS_FDR	rank
997.8	0.028209371	0.092782386	256
985.8	0.029085909	0.095293132	257
1311.8	0.029334189	0.095734059	258
1277.8	0.029882301	0.097146322	259
1254.6	0.030338745	0.09793249	260
1017.8	0.030356746	0.09793249	261
922.6	0.030584535	0.098173842	262
1370	0.030738603	0.098173842	263
800.6	0.030781347	0.098173842	264
987.8	0.030947672	0.098331849	265
1406	0.031242579	0.098895681	266
700.6	0.031590198	0.099621524	267
634.4	0.032937941	0.103484127	268
1498	0.0331626	0.103802636	269
1155.8	0.03457681	0.107828423	270
1092.8	0.034938265	0.108553575	271
1026.8	0.035354865	0.109444105	272
1298	0.035817744	0.110470843	273
993.8	0.035984694	0.110580703	274
721.4	0.037500883	0.114820886	275
1124.8	0.037796694	0.115307305	276
600.4	0.038201667	0.115925758	277
832.6	0.038274775	0.115925758	278
940.6	0.038422234	0.115955272	279
788.6	0.03868091	0.116319022	280
1412.8	0.039037546	0.116764521	281
1189.8	0.039124007	0.116764521	282
912.6	0.039245082	0.116764521	283
914.8	0.039875557	0.118222603	284
1209.8	0.040349283	0.119011231	285
1393.6	0.040424242	0.119011231	286
928.6	0.043103166	0.126455978	287
1031.8	0.043938099	0.128457913	288
795.6	0.044153747	0.128641714	289
805.6	0.046144557	0.133284686	290
1163.8	0.046192023	0.133284686	291
1233.8	0.046222243	0.133284686	292
843.6	0.046445895	0.133472504	293
766.6	0.047113959	0.134931815	294
838.6	0.047650518	0.135748821	295
1246.8	0.047721676	0.135748821	296
1047.8	0.048887006	0.138388799	297
902.6	0.048978459	0.138388799	298
807.6	0.049220845	0.13855611	299
650.4	0.049366785	0.13855611	300

TABLE 3

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
711.6	1.30E-05	0.006945322	1
726.6	1.65E-05	0.006945322	2
1149.8	6.53E-05	0.018314576	3
1102.8	9.84E-05	0.020703306	4
1352.8	0.000147259	0.0227799	5
727.6	0.000162327	0.0227799	6
738.6	0.00021655	0.026047826	7
1339.8	0.000271834	0.027078525	8
1099.8	0.000289438	0.027078525	9
735.6	0.000363671	0.02804441	10
737.6	0.000366376	0.02804441	11
749.6	0.000460819	0.029733295	12
712.6	0.000482142	0.029733295	13
1148.8	0.000494378	0.029733295	14
801.6	0.00053327	0.029934202	15
868.6	0.000720329	0.037907325	16
994.6	0.000801981	0.039721648	17
1100.8	0.000874437	0.040891946	18
1101.8	0.00092826	0.040891946	19
998.8	0.000971305	0.040891946	20
1336.8	0.001152603	0.041619093	21
1113.8	0.001166009	0.041619093	22
1004.6	0.001225246	0.041619093	23
1027.8	0.00124619	0.041619093	24
1051.8	0.001256516	0.041619093	25
789.6	0.001313198	0.041619093	26
1337.8	0.001334579	0.041619093	27
700.6	0.001425624	0.041875688	28
1353.8	0.001452291	0.041875688	29
1002.8	0.001492008	0.041875688	30
1026.8	0.001729682	0.044759748	31
698.4	0.001731972	0.044759748	32
1408.8	0.001754242	0.044759748	33
643.4	0.002149808	0.053239371	34
715.6	0.002425951	0.056350901	35
1339	0.002469753	0.056350901	36
861.6	0.002478389	0.056350901	37
1307	0.002554023	0.056350901	38
1025.8	0.002686084	0.056350901	39
773.6	0.002790904	0.056350901	40
716.6	0.002801531	0.056350901	41
699.6	0.002810853	0.056350901	42
723.4	0.003004853	0.058839206	43
766.6	0.003103996	0.059399187	44
772.6	0.003284206	0.06145114	45
768.6	0.003455945	0.061567875	46
931.8	0.003551532	0.061567875	47
999.6	0.003578562	0.061567875	48
1103.8	0.003582929	0.061567875	49
1340.8	0.003670866	0.061817384	50
1107.8	0.003995479	0.064389524	51

TABLE 3

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1019.6	0.004017488	0.064389524	52
1410	0.004086356	0.064389524	53
869.6	0.004199713	0.064389524	54
1163.8	0.004238391	0.064389524	55
721.4	0.004358462	0.064389524	56
807.6	0.004482771	0.064389524	57
771.6	0.004500308	0.064389524	58
1052.8	0.004511855	0.064389524	59
675.6	0.004651766	0.064430418	60
806.6	0.004704109	0.064430418	61
914.8	0.004744283	0.064430418	62
1104.8	0.005060788	0.065213547	63
717.6	0.005155264	0.065213547	64
722.6	0.00526523	0.065213547	65
862.6	0.005340501	0.065213547	66
805.6	0.005349834	0.065213547	67
1050.6	0.005364941	0.065213547	68
665.6	0.005445806	0.065213547	69
754.6	0.005580423	0.065213547	70
1138.8	0.00567467	0.065213547	71
1301.2	0.005680504	0.065213547	72
1304.8	0.005689961	0.065213547	73
729.6	0.005794904	0.065213547	74
736.6	0.005808808	0.065213547	75
633.4	0.006146808	0.067780331	76
848.6	0.006290275	0.067780331	77
929.8	0.006342437	0.067780331	78
1094.8	0.006699288	0.067780331	79
932.8	0.006705312	0.067780331	80
652.4	0.006711223	0.067780331	81
913.8	0.006713914	0.067780331	82
1018.6	0.006772901	0.067780331	83
860.6	0.006797605	0.067780331	84
650.4	0.006974797	0.067780331	85
884.6	0.00709371	0.067780331	86
930.8	0.007263855	0.067780331	87
1305.8	0.00737985	0.067780331	88
598.4	0.007391121	0.067780331	89
794.6	0.007471607	0.067780331	90
917.8	0.007544547	0.067780331	91
739.6	0.007592763	0.067780331	92
800.6	0.007606694	0.067780331	93
850.6	0.007621041	0.067780331	94
793.4	0.007695199	0.067780331	95
902.6	0.00774748	0.067780331	96
651.4	0.007808423	0.067780331	97
1010.6	0.007941569	0.068232663	98
535.4	0.008030905	0.068303253	99
653.4	0.008711428	0.072710869	100
776.6	0.00872185	0.072710869	101
907.6	0.009010534	0.074187321	102

TABLE 3

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1098.8	0.009075171	0.074187321	103
774.6	0.009504284	0.075593102	104
889.6	0.009520363	0.075593102	105
718.6	0.009606799	0.075593102	106
1127.8	0.009722129	0.075593102	107
918.6	0.009759729	0.075593102	108
767.6	0.010017616	0.075593102	109
775.6	0.010168334	0.075593102	110
1106.8	0.010269779	0.075593102	111
976.6	0.010304106	0.075593102	112
1108.8	0.010350227	0.075593102	113
896.8	0.010390597	0.075593102	114
975.8	0.010442894	0.075593102	115
1029.8	0.010533628	0.075593102	116
942.8	0.010574246	0.075593102	117
750.6	0.010593808	0.075593102	118
883.6	0.010833921	0.076656821	119
1188.8	0.011156664	0.078282592	120
1355	0.011330966	0.078848538	121
912.6	0.01158718	0.079617126	122
1121.8	0.01163053	0.079617126	123
755.6	0.011906893	0.080851647	124
897.6	0.012012452	0.080915874	125
1017.8	0.012326917	0.082375111	126
1005.4	0.012728495	0.084198141	127
916.8	0.012799717	0.084198141	128
1061.6	0.013139295	0.085684368	129
1352	0.013384749	0.085684368	130
618.4	0.013391364	0.085684368	131
690.4	0.013476799	0.085684368	132
1112.8	0.013534467	0.085684368	133
795.6	0.014043383	0.088242748	134
758.6	0.014487373	0.090358285	135
1218.6	0.014715208	0.090711257	136
895.6	0.014814871	0.090711257	137
649.4	0.01491408	0.090711257	138
1302	0.015235418	0.090711257	139
1016.8	0.015284527	0.090711257	140
1015.8	0.015352499	0.090711257	141
777.6	0.015486559	0.090711257	142
666.2	0.015560462	0.090711257	143
1114.8	0.015666544	0.090711257	144
939.6	0.015735653	0.090711257	145
1164.8	0.015802457	0.090711257	146
763.6	0.015867844	0.090711257	147
1105.8	0.015944497	0.090711257	148
728.6	0.016421999	0.091852508	149
1028.8	0.016422682	0.091852508	150
820.6	0.016472362	0.091852508	151
928.6	0.016727571	0.092370571	152
757.6	0.016790261	0.092370571	153

TABLE 3

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1060.6	0.01689438	0.092370571	154
790.6	0.017037191	0.092550418	155
792.6	0.017194104	0.092804077	156
783.6	0.017391152	0.093269745	157
863.6	0.018261447	0.096756559	158
796.6	0.018271132	0.096756559	159
859.6	0.019050218	0.099924166	160
1097.8	0.01910664	0.099924166	161
719.6	0.019789389	0.102684971	162
905.6	0.019878444	0.102684971	163
751.6	0.020427697	0.104878786	164
667.4	0.020711949	0.105693703	165
725.6	0.021835078	0.110304434	166
882.8	0.021970108	0.110304434	167
635.4	0.022008486	0.110304434	168
981.8	0.02245168	0.11185985	169
1143.8	0.022665227	0.112259534	170
710.4	0.023421406	0.115326453	171
619.4	0.02416262	0.117695337	172
745.6	0.024213769	0.117695337	173
1013.8	0.024321839	0.117695337	174
898.6	0.024620488	0.118459718	175
911.6	0.025051982	0.118532871	176
1024.8	0.02510821	0.118532871	177
1265.8	0.025223834	0.118532871	178
676.6	0.025226912	0.118532871	179
1003.8	0.025339569	0.118532871	180
1111.8	0.025591087	0.119048038	181
1209.8	0.026360702	0.121954456	182
586.4	0.02666763	0.122700242	183
572.4	0.026854874	0.122890237	184
1084.8	0.02751246	0.12521887	185
901.6	0.027730621	0.12553324	186
885.6	0.02832074	0.126719887	187
1053.8	0.028530761	0.126719887	188
534.4	0.028718371	0.126719887	189
1141.8	0.028856744	0.126719887	190
1266.8	0.028907656	0.126719887	191
692.6	0.029102169	0.126719887	192
906.6	0.029250393	0.126719887	193
756.6	0.029339584	0.126719887	194
695.6	0.02938451	0.126719887	195
500.4	0.029644421	0.126719887	196
1014.8	0.029670962	0.126719887	197
927.8	0.029798738	0.126719887	198
915.8	0.030093535	0.127330436	199
1123.8	0.030283903	0.127495233	200
724.6	0.030920364	0.128103328	201
674.4	0.030939542	0.128103328	202
873.6	0.030951153	0.128103328	203
1058.8	0.031036911	0.128103328	204

TABLE 3

1_GreenCTvsRedMS

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1086	0.031300891	0.128144392	205
759.6	0.031351241	0.128144392	206
778.6	0.03196902	0.130038238	207
744.6	0.032151672	0.130152442	208
1012.8	0.032324929	0.130227706	209
1208.8	0.03260628	0.130735654	210
1000.8	0.032815281	0.13095008	211
579.4	0.033286959	0.131731806	212
1093.8	0.033472039	0.131731806	213
654.4	0.03348053	0.131731806	214
1139.8	0.03414909	0.132645634	215
523.2	0.034183495	0.132645634	216
696.4	0.034243589	0.132645634	217
623.4	0.034342931	0.132645634	218
890.8	0.035502156	0.136297139	219
691.4	0.035612079	0.136297139	220
632.4	0.036240368	0.138074163	221
977.6	0.036694208	0.139173527	222
614.4	0.037312827	0.140885205	223
821.6	0.037576998	0.141249253	224
640.6	0.038153705	0.142333729	225
770.6	0.03820359	0.142333729	226
952.8	0.038546936	0.142950631	227
1198.8	0.038708722	0.142950631	228
769.6	0.039025464	0.143491008	229
1070.6	0.039420382	0.144312875	230
781.6	0.039935951	0.145291805	231
971.8	0.040083658	0.145291805	232
933.8	0.040235909	0.145291805	233
1199.8	0.040378007	0.145291805	234
784.6	0.041030638	0.147011904	235
802.6	0.041428197	0.147790551	236
1066.8	0.041599003	0.147790551	237
505.4	0.042152476	0.149127667	238
647.4	0.042450558	0.149553849	239
903.6	0.042824497	0.149960617	240
1008.4	0.042922219	0.149960617	241
826.6	0.043132407	0.150072258	242
1076.8	0.043542345	0.15087512	243
1410.8	0.044644228	0.154059182	244
1083.8	0.044873126	0.154111341	245
668.4	0.045280664	0.154111341	246
631.4	0.045361023	0.154111341	247
1150.8	0.045391464	0.154111341	248
782.6	0.046474853	0.157155927	249
730.6	0.047329196	0.158830656	250
1308.6	0.047527379	0.158830656	251
785.6	0.047721969	0.158830656	252
1031.8	0.047724651	0.158830656	253
1122.8	0.048561393	0.160299131	254
963.6	0.048600522	0.160299131	255

TABLE 3**1_GreenCTvsRedMS**

MZ value	Pvalue-GreenCT-RedMS	GreenCT_RedMS_FDR	rank
1200.8	0.049517765	0.160299131	256
1142.8	0.049532186	0.160299131	257
1063.8	0.049660516	0.160299131	258
693.4	0.049693063	0.160299131	259
1201.8	0.049729023	0.160299131	260
583.4	0.04976117	0.160299131	261
1078.8	0.049879302	0.160299131	262